

# CHICAGO

## Electric<sup>®</sup> Power Tools

# 14" PORTABLE GAS CUT-OFF SAW

### Model 98089

## SET UP AND OPERATING INSTRUCTIONS



Diagrams within this manual may not be drawn proportionally.  
Due to continuing improvements, actual product may differ slightly from the product described herein.

**Distributed exclusively by Harbor Freight Tools<sup>®</sup>.**

3491 Mission Oaks Blvd., Camarillo, CA 93011

Visit our website at: <http://www.harborfreight.com>



**Read this material before using this product.  
Failure to do so can result in serious injury.  
SAVE THIS MANUAL.**

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**For technical questions or replacement parts, please call 1-800-444-3353.**

## PRODUCT SPECIFICATIONS

Required Saw Blade Type	14" Diameter (Not Included) 7/64" to 1/4" Thickness Composite Abrasive or Diamond Abrasive Rated at a Minimum 4700 RPM 1" Diameter Spindle Hole
Maximum Saw Blade Speed	4700 RPM
Saw Blade Rotation	Clockwise
Maximum Cutting Depth	4-1/2"
Drive Type	Belt Driven
Belt Type	10X855 Li (3/4" Width)
Spindle Diameter	1" Diameter
Noise Level	110 dBA @ 3 Feet
Engine Specifications	3.8 HP / Recoil Start / Air Cooled Engine Idle Speed: 3000 RPM 64cc Displacement / 49mm Cylinder Bore / Single Cylinder / 34mm Piston Stroke Fuel Mix: Unleaded Gasoline with Octane Rating of 91 / Two Stroke Engine Oil / Ratio 50:1 Fuel Tank Capacity: 0.4 Gallons Ignition Type: Electronically Controlled Magneto Spark Plug Type: NHSP LD L9T, or Bosch WSR 6F or NGK BPMR 7A; M14 x 1.25 Thread Engine Approvals: 2003 U.S. EPA Emission Control: EM / TWC
Optional Water Feed Attachment (not included)	Available from Harbor Freight Tools, SKU 95456 ( <b>WARNING: DO NOT USE A DIAMOND BLADE ON THIS SAW WITHOUT USING THE WATER FEED ATTACHMENT!</b> )

The Emission Control System for this Cut Off Saw is warranted for standards set by the U.S. Environmental Protection Agency. For warranty information, refer to the back two pages of this manual.

### SAVE THIS MANUAL

You will need this manual for the safety warnings and precautions, assembly, operating, inspection, maintenance and cleaning procedures, parts list and assembly diagram. Keep your invoice with this manual. Write the invoice number on the inside of the front cover. Keep this manual and invoice in a safe and dry place for future reference.

## GENERAL SAFETY RULES AND PRECAUTIONS

**⚠ WARNING!**  
**READ AND UNDERSTAND ALL INSTRUCTIONS**  
 Failure to follow all instructions listed below may result in electric shock, fire, and/or serious injury.  
**SAVE THESE INSTRUCTIONS**

### WORK AREA

1. **Keep your work area clean and well lit.** Cluttered benches and dark areas invite accidents.
2. **Do not operate power tools in explosive atmospheres, such as in the presence of flammable liquids, gases, or dust.** Power tools create sparks which may ignite the dust or fumes.
3. **Keep bystanders, children, and visitors away while operating a power tool.** Distractions can cause you to lose control. Provide barriers or shields as needed.

## PERSONAL SAFETY

1. **Stay alert. Watch what you are doing, and use common sense when operating a power tool. Do not use a power tool while tired or under the influence of drugs, alcohol, or medication.** A moment of inattention while operating power tools may result in serious personal injury.
2. **Dress properly. Do not wear loose clothing or jewelry. Contain long hair. Keep your hair, clothing, and gloves away from moving parts.** Loose clothes, jewelry, or long hair can be caught in moving parts.
3. **Remove adjusting keys or wrenches before turning the Cut Off Saw on.** A wrench or a key that is left attached to a rotating part of the machine may result in personal injury.
4. **Do not overreach. Keep proper footing and balance at all times.** Proper footing and balance enables better control of the power tool in unexpected situations.
5. **Use safety equipment.** Always wear ANSI-approved safety impact goggles when using this product. Proper hearing and breathing protection must also be used.

## TOOL USE AND CARE

1. **Do not force the tool. Use the correct tool for your application.** The correct tool will do the job better and safer at the rate for which it is designed.
2. **Do not use the Cut Off Saw if the Engine's Kill Switch (5D) does not immediately turn it off.** Any tool that cannot be controlled with its Kill Switch is dangerous and must be replaced.
3. **Store idle tools out of reach of children and other untrained persons.** Tools are dangerous in the hands of untrained users.
4. **Maintain tools with care.** Properly maintained tools are less likely to malfunction and are easier to control. Do not use a damaged tool. Tag damaged tools "**Do not use**" until repaired.
5. **Check for misalignment or binding of moving parts, breakage of parts, and any other condition that may affect the tool's operation. If damaged, have the tool serviced before using.** Many accidents are caused by poorly maintained tools.
6. **Use only accessories that are recommended by the manufacturer for your model.** Accessories that may be suitable for one tool may become hazardous when used on another tool.

## SERVICE

1. **Tool service must be performed only by qualified repair personnel.** Service or maintenance performed by unqualified personnel could result in a risk of injury.
2. **When servicing a tool, use only identical replacement parts. Follow instructions in the “*Inspection, Maintenance, And Cleaning*” section of this manual.** Use of unauthorized parts or failure to follow maintenance instructions may create a risk of electric shock or injury.

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## **SPECIFIC SAFETY GENERAL RULES AND PRECAUTIONS**

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1. **Maintain labels and nameplates on the Cut Off Saw.** These carry important information. If unreadable or missing, contact Harbor Freight Tools for a replacement.
2. **Industrial applications must follow OSHA guidelines.**
3. **Never stand on the Cut Off Saw.** Serious injury could result if the Saw is tipped.
4. **Never leave the Cut Off Saw unattended when it is running.** Turn off the Saw before leaving.
5. **Do not allow children and other unauthorized people to handle or play with the Cut Off Saw. Keep children and other bystanders away from the working area.**
6. **This Cut Off Saw is designed for outdoor use only.** Do not operate the Cut Off Saw in a closed area or in a poorly ventilated area. **When running, the Engine of this Cut Off Saw produces carbon monoxide, a colorless, odorless, toxic fume that, when inhaled, can cause serious personal injury or death. Whenever possible, use a carbon monoxide detector (not included) to detect excessive carbon monoxide fumes in the work area and in the surrounding area.**
7. **Do not force the Cut Off Saw.** This tool will do the work better and safer at the speed and capacity for which it was designed.

## FIRE AND EXPLOSION PRECAUTIONS

1. **Gasoline fuel and fumes are flammable, and potentially explosive.** Use proper fuel storage and handling procedures. Always have multiple ABC class fire extinguishers nearby.
2. **Keep the Cut Off Saw and surrounding areas clean at all times.**
3. **When spills of fuel or oil occur, they must be cleaned up immediately.** Dispose of fluids and cleaning materials as per any local, state, or federal codes and regulations. Store oil rags in a covered metal container.

4. **Never store fuel or other flammable materials near the Cut Off Saw.**
5. **Do not smoke, or allow sparks, flames, or other sources of ignition around the Cut Off Saw.**
6. **Keep grounded conductive objects, such as tools, away from exposed, live electrical parts and connections to avoid sparking or arcing.** These events could ignite fumes or vapors.
7. **Do not refill the Fuel Tank while the Engine is running or while the Engine is still hot.** Do not operate the Cut Off Saw with known leaks in the fuel system.

### **MECHANICAL PRECAUTIONS**

1. **Prior to performing service, maintenance, or cleaning procedures, always make sure the Engine is off. Allow the Engine and Cut Off Saw to completely cool. Then, remove the spark plug from the Engine.**
2. **Do not alter or adjust any part of the Cut Off Saw or Engine that is assembled and supplied by the manufacturer.**
3. **Always follow scheduled Cut Off Saw and Engine maintenance.**

### **CHEMICAL PRECAUTIONS**

1. **Avoid contact with hot fuel, oil, exhaust fumes, and solid surfaces.**
2. **Avoid body contact with fuels, oils, and lubricants used in the Cut Off Saw and Engine.** If swallowed, seek medical treatment immediately. Do not induce vomiting if fuel is swallowed. For skin contact, immediately wash with soap and water. For eye contact, immediately flush eyes with clean water.

### **NOISE PRECAUTION**

**Prolonged exposure to high noise levels is hazardous to hearing.** Always wear ANSI-approved hearing protection when operating or working around the Cut Off Saw when it is running.

### **SAW BLADE PRECAUTIONS**

1. **Only use Saw Blades with the following specifications:**
  - a. **14" Diameter.**
  - b. **From 7/64" to 1/4" thickness.**
  - c. **1" Diameter spindle mounting hole.**
  - d. **Only composite abrasive or diamond abrasive Saw Blades rated at a minimum of 4,700 RPM.**

2. **Never use carbide-tipped, woodcutting, or circular machine Saw Blades.** They can cause severe personal injury from reactive forces, blade contact, or thrown objects.
3. **Only cut asphalt, concrete, stone, brick, and plastics with this Cut Off Saw.**
4. **Inspect the Saw Blade frequently, and replace immediately if the Blade is cracked, or warped.** Cracked or warped Saw Blades may shatter or break and cause serious personal injury.
5. **Always install the Saw Blade so that the arrow on the Blade points in the direction of the rotation of the spindle.**
6. **Keep hands and fingers away from the cutting area and Saw Blade.**
7. **Never attempt to cut more than one workpiece at a time.**
8. **When cutting a large workpiece, make sure its entire length is properly supported.** If necessary, use a roller stand (not included).
9. **Allow the Saw Blade to spin up to full speed before feeding it into a workpiece.** When turning off the Cut Off Saw, allow the Saw Blade to spin down and stop on its own. Do not press against the Saw Blade to stop it.
10. **Do not force the Saw Blade into the workpiece when cutting.** Apply moderate pressure, allowing the Saw Blade to cut without being forced.
11. **To avoid accidental injury, always wear heavy duty work gloves when changing the Saw Blade.**
12. **The Saw Blade will become hot while cutting.** Allow the Saw Blade to completely cool before handling.
13. **Turn off the Cut Off Saw and allow the Saw Blade to completely stop if the Saw Blade is to be backed out of an uncompleted cut.**
14. **Never attempt to remove material stuck in the Cut Off Saw while it is operating.**

### **KICKBACK PRECAUTIONS**

1. **Make sure the workpiece is free from nails, metal rebar, and any other foreign objects that could damage the Saw Blade or cause “kickback”.**
2. **Causes and operator prevention of “kickback”:** Kickback is a sudden reaction to a pinched, bound, or misaligned Saw Blade, causing an uncontrolled Cut Off Saw to lift up and out from the workpiece toward the operator. When the Saw Blade is pinched or bound tightly by the kerf closing down, the Saw Blade stalls and the engine reaction drives the Cut Off Saw rapidly back toward the operator. If the Saw Blade becomes twisted or misaligned in the cut, the teeth at the back

edge of the Saw Blade can raise the Cut Off Saw (walk up) toward the operator. Kickback is a result of tool misuse and/or incorrect operating procedures or conditions and can be avoided by taking proper precautions as given below:

- **Maintain control of the Cut Off Saw at all times.** Never allow the rotating Saw Blade to rest on the workpiece without holding on to the Saw with both hands.
- **When the Saw Blade is binding, or when interrupting a cut for any reason, turn off the Cut Off Saw and hold the Saw motionless until the Saw Blade comes to a complete stop.** Never attempt to remove the Saw Blade from the workpiece or pull the Saw backward while the Saw Blade is in motion or kickback may occur. Investigate and take corrective actions to eliminate the cause of Saw Blade binding.
- **When restarting the Cut Off Saw on a workpiece, center the Saw Blade in the pre-cut kerf and check that the Saw Teeth are not engaged into the workpiece.** If the Saw Blade is binding, the Cut Off Saw may walk up or kickback as the Saw is restarted.
- **Support large panels with roller stands** (not included) **to minimize the risk of Saw Blade pinching and kickback.** Large panels tend to sag under their own weight. Supports must be placed under the panel and near the outer edge of the panel.
- **Do not use a dull or damaged Saw Blade.** Unsharpened or improperly set Saw Blades produce a narrow kerf causing excessive friction, Saw Blade binding and kickback.
- **Push the Saw Blade past the workpiece prior to release.**
- **Make sure to check the Blade Guard for proper operation.** Never disable the Guard. Do not use the Cut Off Saw if the Guard assembly does not operate properly. Before each use, make sure the Blade Guard does not touch the Saw Blade.

### **MISC. PRECAUTIONS**

1. **WARNING!** Some dust created by power sanding, sawing, grinding, drilling, and other construction activities, contain chemicals known (to the State of California) to cause cancer, birth defects or other reproductive harm. Some examples of these chemicals are: lead from lead-based paints, crystalline silica from bricks and cement or other masonry products, arsenic and chromium from chemically treated lumber. Your risk from these exposures varies, depending on how often you do this type of work. To reduce your exposure to these chemicals: work in a well ventilated area, and work with approved safety equipment, such as those dust masks that are specially designed to filter out microscopic particles.  
(California Health & Safety Code § 25249.5, *et seq.*)
2. **WARNING!** People with pacemakers should consult their physician(s) before using this product. Electromagnetic fields in close proximity to a heart pacemaker could cause interference to or failure of the pacemaker.



3. **WARNING!** The warnings and precautions discussed in this manual cannot cover all possible conditions and situations that may occur. It must be understood by the operator that common sense and caution are factors which cannot be built into this product, but must be supplied by the operator.

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## **SAVE THESE INSTRUCTIONS**

**CAUTION!** Your Warranty is voided if:

**You do not operate the Cut Off Saw with the proper 50:1 fuel mix in its Fuel Tank.** Never run the Engine with an improper fuel mix, low or no fuel mix. Running the Engine with an improper fuel mix, low or no fuel mix will permanently damage the unit.

**SEE PAGES 12 AND 13 OF THIS MANUAL FOR FUEL MIX INSTRUCTIONS.**

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## **UNPACKING**

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When unpacking, check to make sure all the parts shown on the **Parts Lists on pages 19 through 26** are included. If any parts are missing or broken, please call Harbor Freight Tools at the number shown on the cover of this manual as soon as possible.

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## **PRODUCT FEATURES**

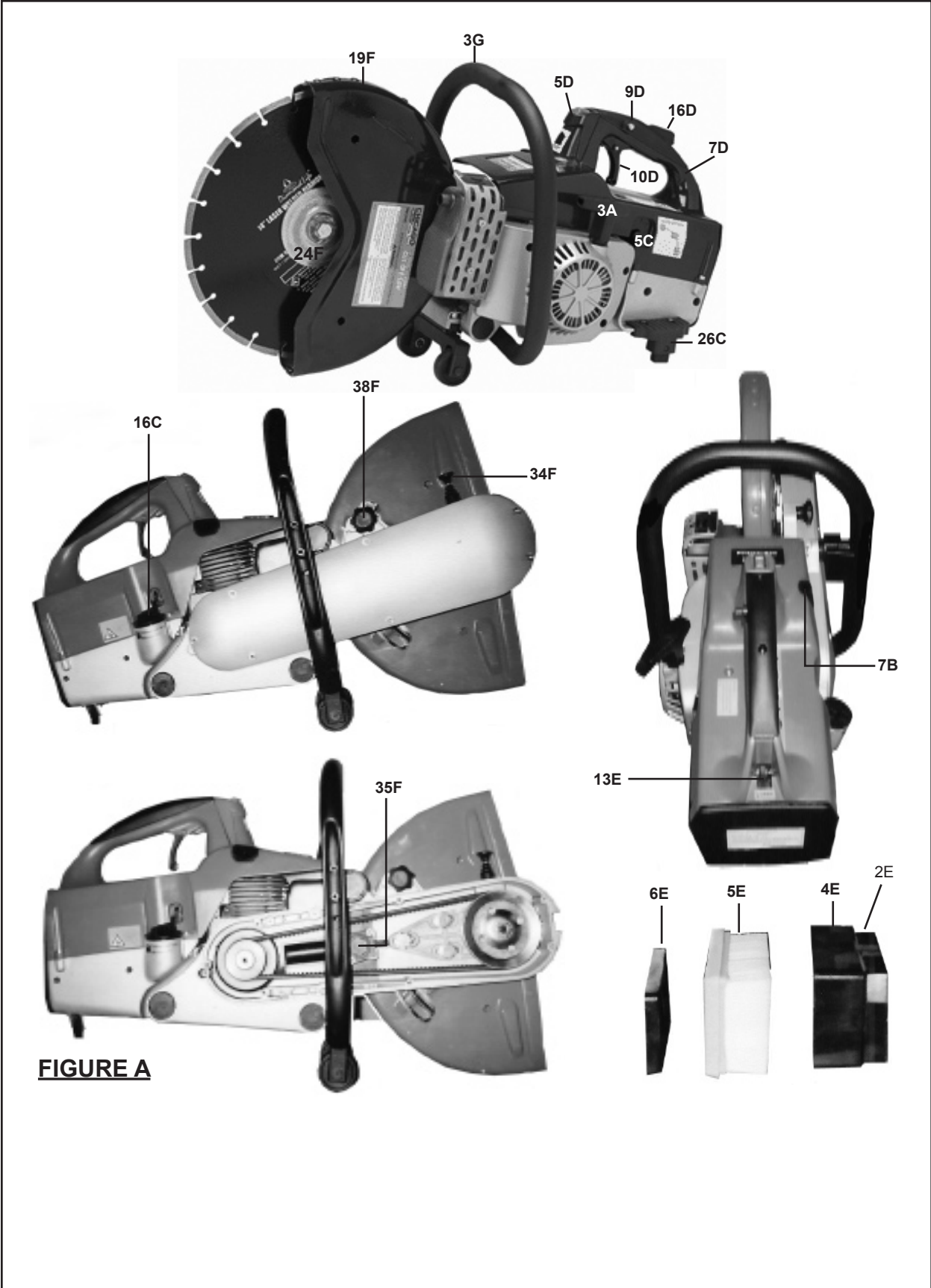
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**(See Figure A, page 11, for details.)**

1. **Saw Blade (23F):** Use only composite abrasive or diamond abrasive Blades (not included). Depending on the material to be cut, these Blades are made of different materials. Make sure to choose the right Blade for the material being cut. The Saw Blade should be 14" in diameter. From 7/64" to 1/4" thickness, and with a 1" diameter spindle mounting hole. The Saw Blade should be rated at a minimum of 4,700 RPM.
2. **Flanges (22F):** Clamp and support the composite or diamond Saw Blade (23F).
3. **Hex Bolt (25F):** Tightens the Flange (22F).
4. **Blade Guard (19F):** Safety guard. Directs sparks and dust away from the operator.
5. **Front Handle (3G):** Use to securely hold the Cut Off Saw when operating.
6. **Spark Plug Cover (4D):** A removable cover for access to the Spark Plug (2B).
7. **ON/OFF (5D):** Engine stops when this switch is in Off position.
8. **Full Throttle Lock Button (9D):** To lock the Throttle Trigger (10D) in wide open position, press this button while the Throttle Trigger is fully depressed. Pressing and releasing the Throttle Trigger will return the Throttle Trigger to its idle position.



9. **Throttle Trigger (10D):** Controls the Engine speed. Pulling back on the Throttle Trigger opens the throttle and the Engine accelerates. Releasing the Throttle Trigger slows down the Engine.
10. **Rear Handle (7D):** Use to securely hold the Cut Off Saw when operating.
11. **Filter Cover Lock Lever (13E):** Locks the Air Filter Cover (1E). Pull back on the Filter Cover Lock Lever to open the Air Filter Cover.
12. **Pre-Filter 1 (2E), Pre-Filter 2 (3E), Filter Housing (4E), Paper Air Filter (5E), Secondary Filter (6E):** Filters the air, preventing dirt and debris from entering the Carburetor (7C).
13. **Choke Lever (5C):** Turning this Lever counterclockwise closes the Carburetor. Use the Choke Lever to prime the Engine (cold starting). Turn clockwise for normal operation.
14. **Starter Grip (3A):** Pull to start Engine.
15. **Fuel Tank Cap (16C):** Open this Cap for filling the Fuel Tank (2C, 10C). Close the Fuel Tank Cap prior to for starting and operation.
16. **Decompression Valve (7B):** Press down on this Valve to make starting easier. When air pressure in the Engine reaches a preset value, the Valve automatically closes.
17. **Belt Tensioner with Tensioning Nut (35F):** For V-Belt tension adjustment. Turn the Nut clockwise to loosen the V-Belt. Turn the Nut counterclockwise to add more tension to the V-Belt.
18. **Muffler (9B):** Reduces both noise and emissions.
19. **Blade Guard Positioning Knob (38F):** Loosen the Knob to adjust the Blade Guard (19F) position.
20. **Shaft Lock (34F):** Press and hold the Shaft Lock to facilitate Saw Blade (23F) changing and installation.
21. **Trigger Safety Lever (16D):** This lever must be depressed in order for the engine to start.
22. **Foot Plate (26C):** Place foot on plate while starting engine.



**FIGURE A**

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## ASSEMBLY INSTRUCTIONS

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**CAUTION!** Make sure to wear ANSI-approved safety impact eyeglasses when performing any assembly of the Cut Off Saw. Also, when installing or replacing the Saw Blade (23F) (not included) wear heavy duty work gloves to avoid accidental cuts to the hands and fingers.

### **To Install A Saw Blade:**

1. Make sure to refer to the **“SAW BLADE PRECAUTIONS”** section on **page 6** of this manual to select the correct size and type of Saw Blade to install in the Cut Off Saw.
2. Press down on the Shaft Lock (34F) to hold the Blade Shaft (16F) in position. **(See Figure A.)**
3. Loosen and remove the Hex Bolt (25F). Then, remove the Washer (24F) and outer Flange (22F). **(See Figure A.)**
4. Mount the new Saw Blade (not included) on the Blade Shaft (16F). **IMPORTANT:** Make sure the **arrow** shown on the Saw Blade points in the same direction as the **arrow** shown on the Blade Guard (19F). **(See Figure A.)**
5. Once the Saw Blade (not included) is mounted on the Blade Shaft (16F), replace the outer Flange (22F) and Washer (24F). Then, firmly tighten the Hex Bolt (25F) to secure the Saw Blade in place. **(See Figure A.)**
6. Make sure to check the Blade Guard (19F) for proper operation. If necessary, loosen the Blade Guard Positioning Knob (38F) to adjust the Blade Guard (19F) position. Never disable the Guard. Do not use the Cut Off Saw if the Guard assembly does not operate properly. Before each use, make sure the Blade Guard does not touch the Saw Blade. **(See Figure A.)**

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## PRE-START INSTRUCTIONS

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### **To Fill The Fuel Tank:**

1. **WARNING! Your Warranty is voided if: You do not operate the Cut Off Saw with the proper 50:1 fuel mix in its Fuel Tank.** Never run the Engine with an improper fuel mix, low or no fuel mix. Running the Engine with an improper fuel mix, low or no fuel mix will permanently damage the unit.
2. To obtain the proper 50:1 fuel mix, combine two cycle oil with unleaded gasoline (minimum 91 octane rating) in a clean, approved container. Cover and shake to thoroughly mix before each fueling. Refer to the Chart below for proper mix quantities. **NOTE:** Mix only enough fuel for a few days work. The maximum storage time of mixed fuel is 3 months. **(See Table A.)**

- Once the proper fuel mix is obtained, remove the Fuel Tank Cap (16C). Fill the Fuel Tank (2C, 10C) approximately 3/4 full with the fuel mix (the Fuel Tank capacity is 0.4 gallons). Then, replace the Fuel Tank Cap. **(See Figure A.)**

FUEL MIX QUANTITIES		
Ratio	Two Cycle Oil	Unleaded Gasoline (91 Octane)
50:1	4 Fl. Oz.	1.5 Gal.
50:1	8 Fl. Oz.	3 Gal.
50:1	16 Fl. Oz.	6 Gal.

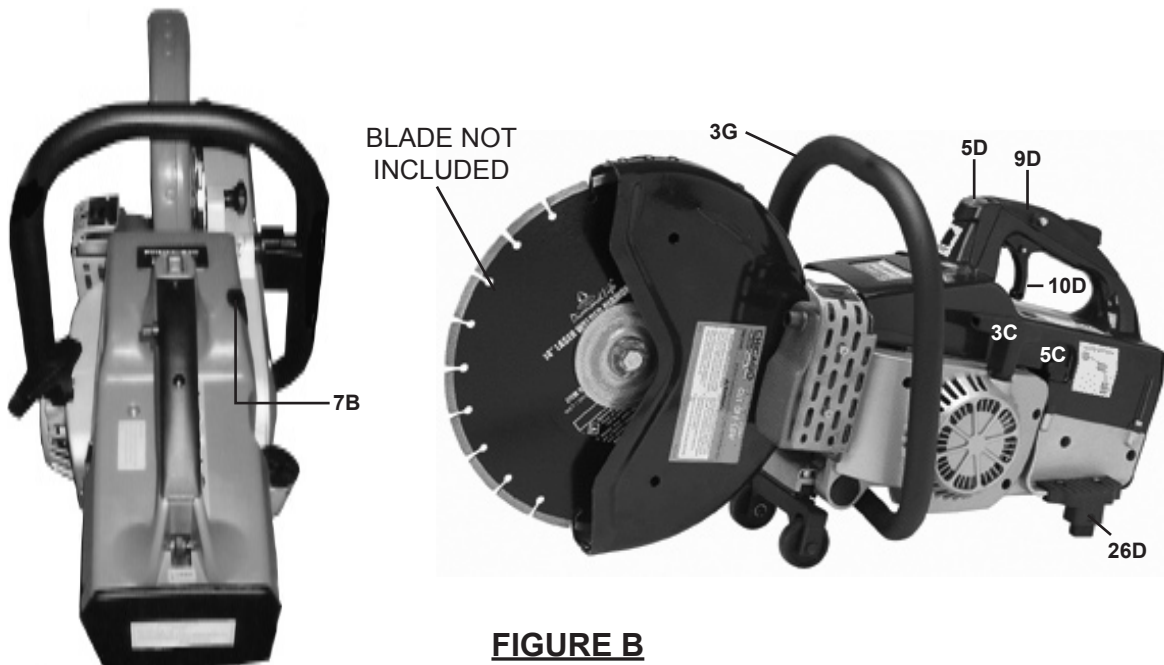
**Table A**

## OPERATING INSTRUCTIONS

**Note: Please read and familiarize yourself with the How To Stop The Cut Off Saw instructions on page 13 before operating.**

### **To Start The Cut Off Saw:**

- WARNING!** Wear ANSI-approved safety impact goggles, hearing protection, and NIOSH-approved dust mask/respirator during use.
- Place the Cut Off Saw on flat, level ground, so that the Saw Blade (not included) does not contact any objects or the ground. Orient the saw away from your body.



**FIGURE B**

- Move the ON/OFF Button (5D) to the on position. Place your hand on the Rear Handle (7D). Hold the Trigger Safety Lever (16D) down with your palm while squeezing the Trigger (10D) and then using your thumb, press down on the Full Throttle Lock Button (9D). (See Figure B.)

4. Release the Trigger (10D). The Trigger should remain locked in the engaged position. **(See Figure B.)**
5. Press the Decompression Valve Button (7B) in. **(See Figure B.)**
6. Set the Choke Lever (5C) to the START position. **(See Figure B.)**
7. Place your right foot on the Foot Pad (26C) while you firmly hold the Front Handle (3G) with your left hand. **(See Figure B.)**
8. Pull the Starter Grip (3A) several times until the engine fires, (or turns over, tries to start but doesn't). **(See Figure B.)**
9. Set the Choke Switch (5C) to the Run position, press the Decompression Valve Button (7B) in and pull the rope again.
10. As soon as the Engine starts, squeeze the Throttle Trigger (10D) briefly and let up. The Full Throttle Lock Button (9D) will revert to its original position, causing the Engine to idle. **(See Figure B.)**
11. NOTE: If the weather is very cold (20 degrees F or colder), follow the normal starting instructions except for this one change. Set the Choke Switch (5C) to the middle position initially instead of the start position as instructed in step 6.
12. If the engine does not start, press the Decompression Valve Button (7B) in and attempt to start it again.

#### **To Operate The Cut Off Saw:**

1. NOTE: During the break-in phase, which takes about eight hours of use, the Cut Off Saw must not be operated at high speeds without a load (do not pull the Throttle Trigger (10D) beyond 3/4 of full throttle). Following this procedure will lengthen the service life of the Saw.
2. NOTE: After running the Cut Off Saw for an extended period of time, allow the Engine to idle for several minutes to dissipate the heat. This will prevent some engine parts (ignition system, carburetor, etc.) from being damaged by overheating.
3. IMPORTANT: The Saw Blade (not included) will not rotate when the Engine idles. (See Figure A.)
4. When the Cut Off Saw is ready to operate, gently pull the Throttle Trigger (10D) backward to accelerate the Engine. Once the Engine accelerates, the Saw Blade will begin to rotate and speed up. When the blade speed is up and stable, you can begin to move the Saw slowly toward the object to be cut.
5. While holding the Cut Off Saw firmly, approach the object to be cut with the Saw Blade and increase pressure on the Cut Off Saw slowly until the Saw Blade is at the desired depth of cut. Move forward along a straight line to complete the cut.

#### **To Turn Off The Cut Off Saw:**

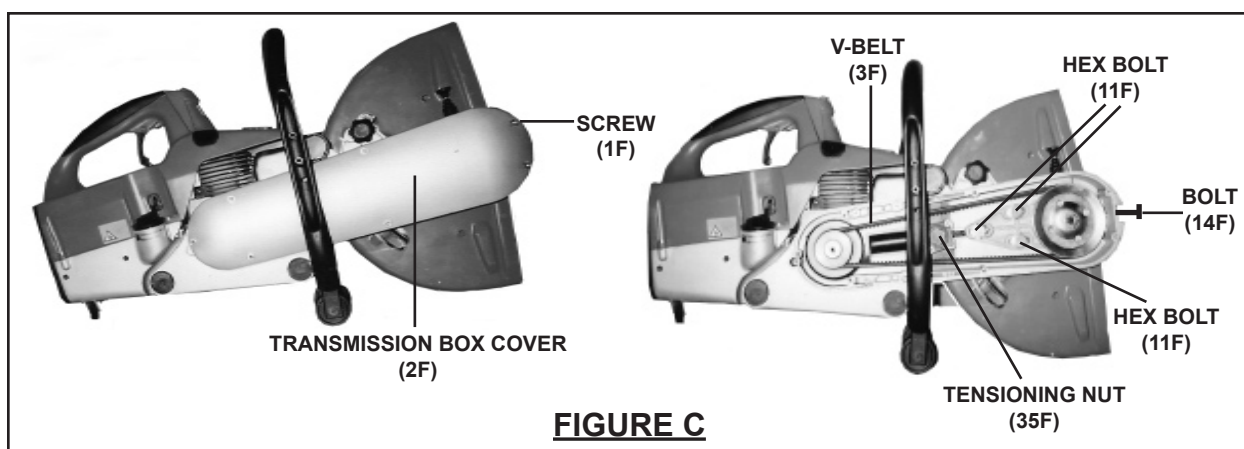
To turn off the saw after a cut is completed, lift the Saw Blade out of the cut then release the Throttle Trigger (10D). Wait until the Engine slows down to idle speed and the Saw Blade stops rotating, then move the On/OFF Switch (5D) located at the front of the Rear Handle (7D) to its OFF position. **(See Fig. B.)**

## INSPECTION, MAINTENANCE, AND CLEANING

1. **WARNING!** Always make sure the Cut Off Saw is in the “OFF” position prior to performing any service, maintenance, or cleaning of the Saw or the Engine.
2. **Before each use**, inspect the general condition of the Cut Off Saw. Check for loose screws, misalignment or binding of moving parts, cracked or broken Saw Blade, loose connections, and any other condition that may affect the safe operation of the Cut Off Saw. If abnormal noise or vibration occurs, have the problem corrected before further use.

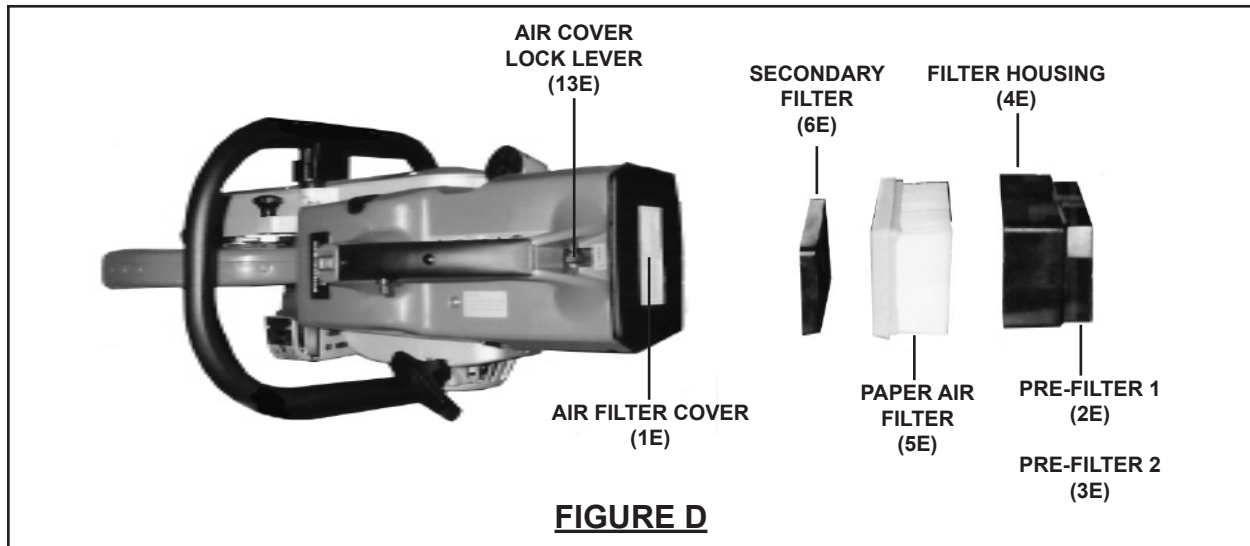
**Do not use damaged equipment.**

3. **To adjust the V-Belt (3F) tension:**



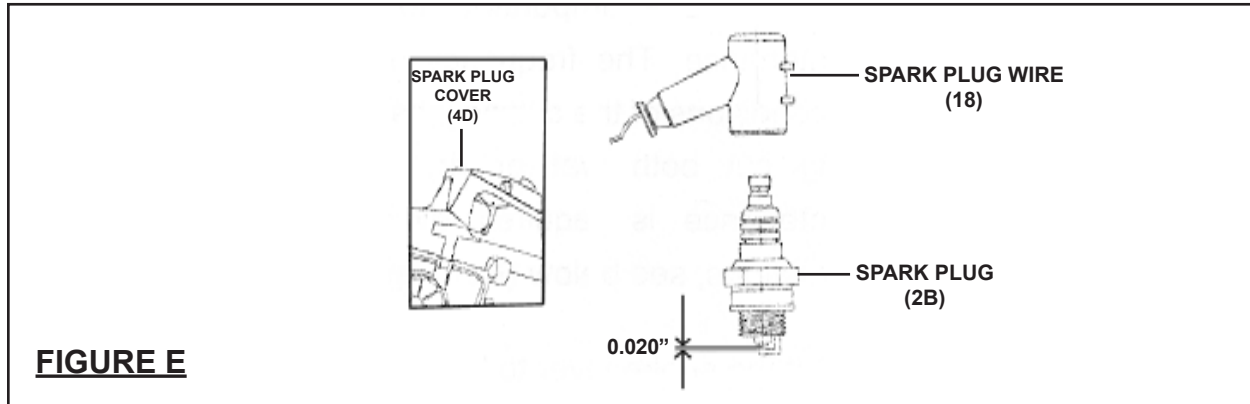
- a. Loosen and remove the Screws (1F) on the Transmission Box Cover (2F). Then, remove the Transmission Box Cover. **(See Figure C.)**
  - b. Loosen the three Hex Bolts (11F) on the Bearing Plate (12F). **(See Figure C.)**
  - c. Turn the Tensioning Nut (35F) *clockwise* to increase tension on the V-Belt (3F). Turn the Tensioning Nut *counterclockwise* to decrease tension on the V-Belt (or turn the Bolt (14F) clockwise or counterclockwise). **(See Figure C.)**
  - d. Tighten the three Hex Bolts (11F) on the Bearing Plate (12F). **(See Figure C.)**
  - e. Replace the Transmission Box Cover (2F), and secure it with the Screws (1F). **(See Figure C.)**
4. **To clean the Pre-Filter 1 (2E), Pre-Filter 2 (3E), Filter Housing (4E), Paper Air Filter (5E), and Secondary Filter (6E).**
    - a. It is recommended to clean the Pre-Filter 1, Pre-Filter 2, Filter Housing, Paper Air Filter, and Secondary Filter daily. To do so, pull the Filter Cover Lock Lever (13E) backward to allow the Air Filter Cover (1E) swing open. Remove the Pre-Filter 1, Pre Filter 2, Filter Housing, and Paper Air Filter in succession. Clean and dry the parts or replace if necessary. Once cleaned or replaced, install the parts in reverse order of removal and close the Air Filter Cover. **(See Figure D.)**





5. **To service the Spark Plug (2B):** If the Engine loses power, is difficult to start, or runs poorly at idling speed, first check the condition of the Spark Plug. To check the Spark Plug:
- a. Remove the Spark Plug Cover (4D) located at the front of the Rear Handle (7D). **(See Figure E.)**
  - b. Remove the Spark Plug Wire (18). Then, unscrew and remove the Spark Plug (2B). **(See Figure E.)**
  - c. Clean off the carbon build-up on the Spark Plug (2B). **(See Figure E.)**
  - d. Check the electrode gap to see if it is 0.020". If necessary, readjust. **(See Figure E.)**
  - e. Replace the Spark Plug (2B) after every 100 operating hours, or earlier if the electrodes are badly eroded (a Bosch WSR 6 F or NGK BPMR 7A is recommended for replacement). **(See Figure E.)**
  - f. Replace the Spark Plug (2B), Spark Plug Wire (18), and Spark Plug Cover (4D). **(See Figure E.)**





6. **When storing the Saw**, make sure to store the unit in a clean, dry, safe location out of reach of children and other unauthorized people. For long periods of storage, drain and clean the Fuel Tank (2C, 10C).
7. **CAUTION! All maintenance, service, or repairs not mentioned in this manual must only be performed by a qualified service technician.**

## TROUBLESHOOTING

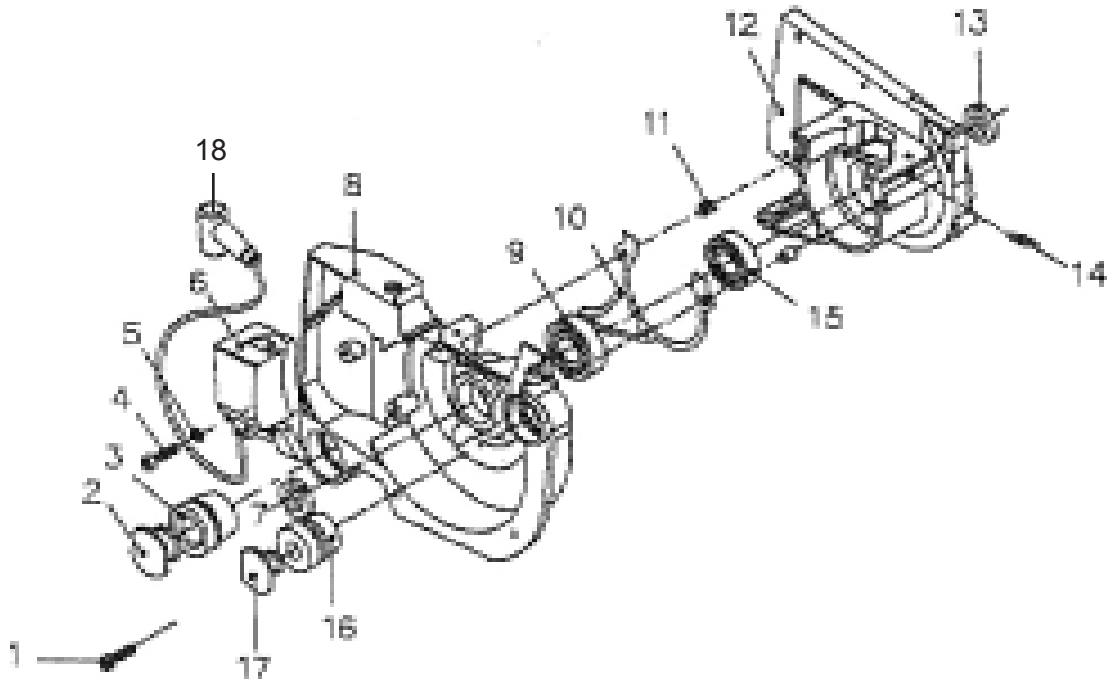
Problem	Possible Solution
Engine will not start or runs poorly.	<ol style="list-style-type: none"> <li>1. Check for amount of fuel.</li> <li>2. Make sure Choke Lever is in proper position.</li> <li>3. Make sure Spark Plug Wire is not loose.</li> <li>4. Check condition of Spark Plug. Wipe off any excess fuel with a clean, dry cloth. Prior to reinstalling the spark plug, vent the combustion chamber by pulling the start grip several times.</li> <li>5. Make sure Air Filter assembly is clean.</li> <li>6. Make sure to press Decompression Valve before starting. Clean/replace valve if it pops up without being pulled when unit is off.</li> <li>7. Have a qualified service technician check the ignition system.</li> <li>8. Have a qualified technician check/adjust the carburetor. The carburetor is not set to run satisfactorily at altitudes above 5,000 ft.</li> </ol>
Engine smokes excessively when running.	<ol style="list-style-type: none"> <li>1. Check for proper mix of fuel.</li> <li>2. Check Air Filter condition.</li> </ol>
Saw Blade not rotating up to full speed.	<ol style="list-style-type: none"> <li>1. Check for proper mix and amount of fuel.</li> <li>2. Check condition of Spark Plug.</li> <li>3. Adjust tension on V-Belt.</li> <li>4. Check Air Filter.</li> </ol>
Poor quality of cut.	<ol style="list-style-type: none"> <li>1. Make sure Blade is undamaged.</li> <li>2. Make sure Saw Blade is properly installed.</li> </ol>
Kill Switch does not turn off Engine.	Immediately discontinue use of Cut Off Saw. Have a qualified service technician check the Kill Switch.

## PLEASE READ THE FOLLOWING CAREFULLY

THE MANUFACTURER AND/OR DISTRIBUTOR HAS PROVIDED THE PARTS LIST AND ASSEMBLY DIAGRAM IN THIS MANUAL AS A REFERENCE TOOL ONLY. NEITHER THE MANUFACTURER OR DISTRIBUTOR MAKES ANY REPRESENTATION OR WARRANTY OF ANY KIND TO THE BUYER THAT HE OR SHE IS QUALIFIED TO REPLACE ANY PARTS OF THE PRODUCT. IN FACT, THE MANUFACTURER AND/OR DISTRIBUTOR EXPRESSLY STATES THAT ALL REPAIRS AND PARTS REPLACEMENTS SHOULD BE UNDERTAKEN BY CERTIFIED AND LICENSED TECHNICIANS, AND NOT BY THE BUYER. THE BUYER ASSUMES ALL RISKS AND LIABILITY ARISING OUT OF HIS OR HER REPAIRS TO THE ORIGINAL PRODUCT OR REPLACEMENT PARTS THERETO, OR ARISING OUT OF HIS OR HER INSTALLATION OF REPLACEMENT PARTS THERETO.

### PARTS LIST/ASSEMBLY DIAGRAM CRANKSHAFT HOUSING ASSEMBLY

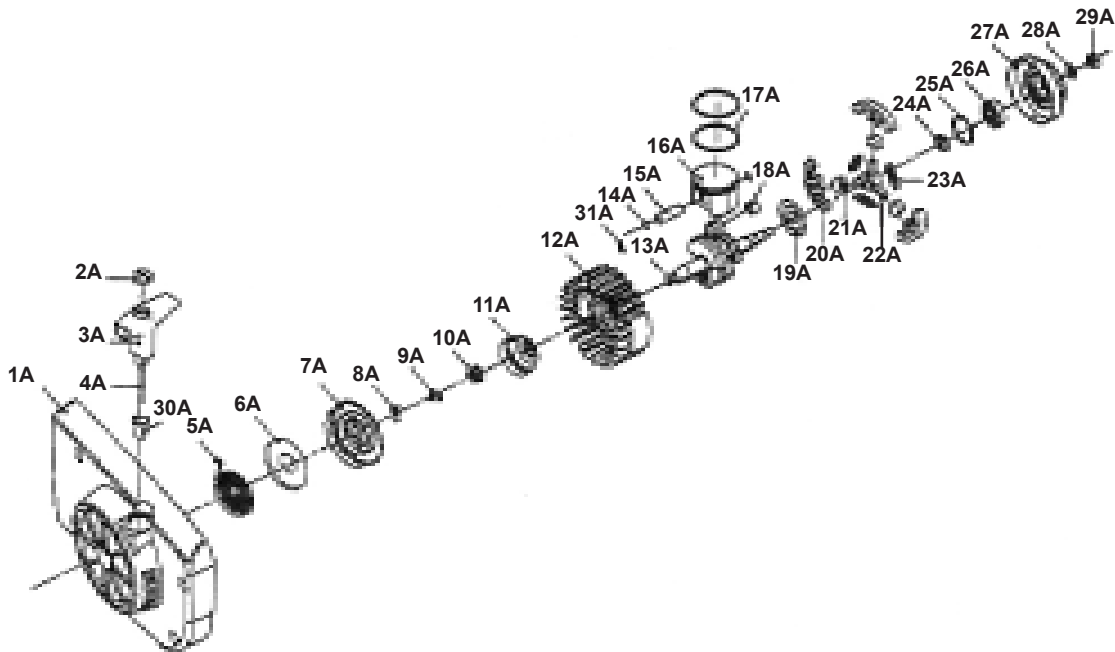
Part	Description	Q'ty	Part	Description	Q'ty
1	Screw (M5 x 20)	10	10	Gasket	1
2	Plug	1	11	Positioning Sleeve	2
3	Cover	1	12	Crankshaft Housing (Right)	1
4	Screw (M5 x 20)	3	13	Oil Seal (15 x 24 x 7)	1
5	Washer (5)	3	14	Oil Needle	1
6	Coil	1	15	Ball Bearing (6202)	1
7	Oil Seal (17 x 28 x 7)	1	16	Cover	1
8	Crankshaft Housing (Left)	1	17	Plug	1
9	Ball Bearing (6203)	1	18	Spark Plug Wire	1



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and are not available individually as replacement parts.

## PARTS LIST/ASSEMBLY DIAGRAM CRANKSHAFT & PISTON ASSEMBLY

Part	Description	Q'ty.	Part	Description	Q'ty.
1A	Flywheel/Starter Cover	1	16A	Piston	1
2A	Screw Plug	1	17A	Piston Ring	2
3A	Starter Grip	1	18A	Needle Cage	1
4A	Starter Rope	1	19A	Washer	1
5A	Rewind Spring	1	20A	Clutch Shoe	3
6A	Spring Cover	1	21A	Retainer	3
7A	Rope Rotor	1	22A	Clutch	1
8A	Pawl	1	23A	Tension Spring	3
9A	Spring Clip	1	24A	Ring	1
10A	Collar Nut	1	25A	Retainer Ring (30)	1
11A	Starter Cup	1	26A	Bearing (6200)	1
12A	Flywheel	1	27A	V-Belt Pulley	1
13A	Crankshaft	1	28A	Washer	1
14A	Locking Clip	2	29A	Collar Nut (M8 x 1)	1
15A	Piston Pin	1	30A	Rope Bushing	1



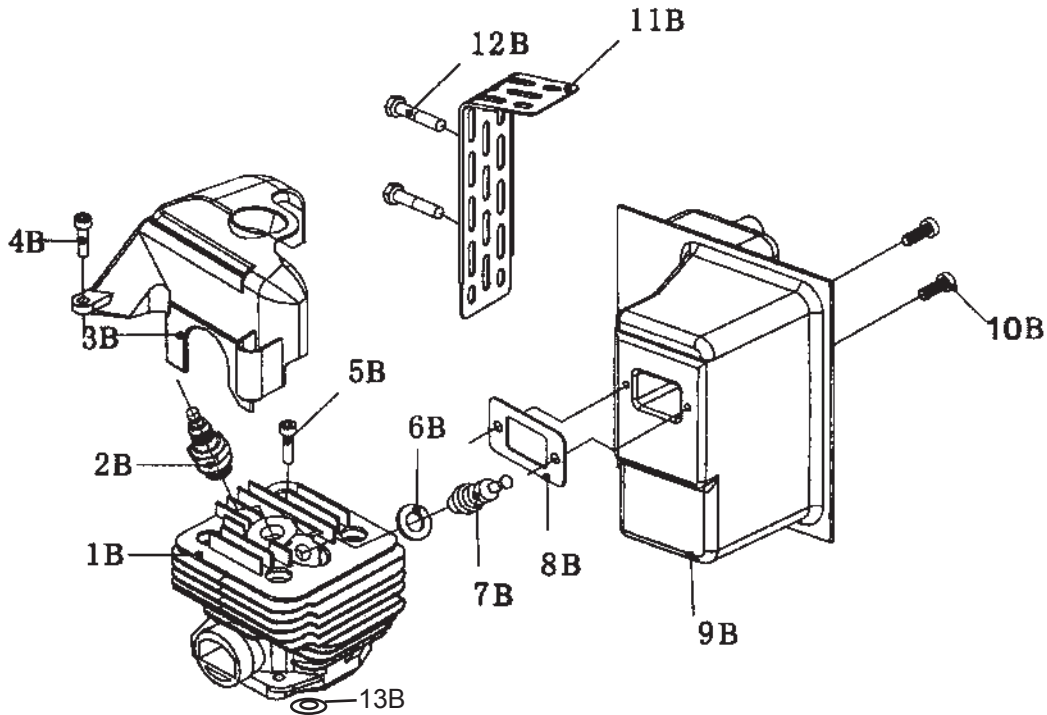
**NOTE:**

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**PARTS LIST/ASSEMBLY DIAGRAM  
CYLINDER & MUFFLER ASSEMBLY**

Part	Description	Qty.
1B	Cylinder	1
2B	Spark Plug	1
3B	Cylinder Cover	1
4B	Screw (M5 x 16)	3
5B	Screw (M5 x 20)	4
6B	Washer	1
7B	Decompression Valve	1

Part	Description	Qty.
8B	Exhaust Gasket	1
9B	Muffler Assembly	1
10B	Screw (M5 x 16)	2
11B	Muffler Guard	1
12B	Screw M5 x 12	1
13B	Gasket, Cylinder Base	1

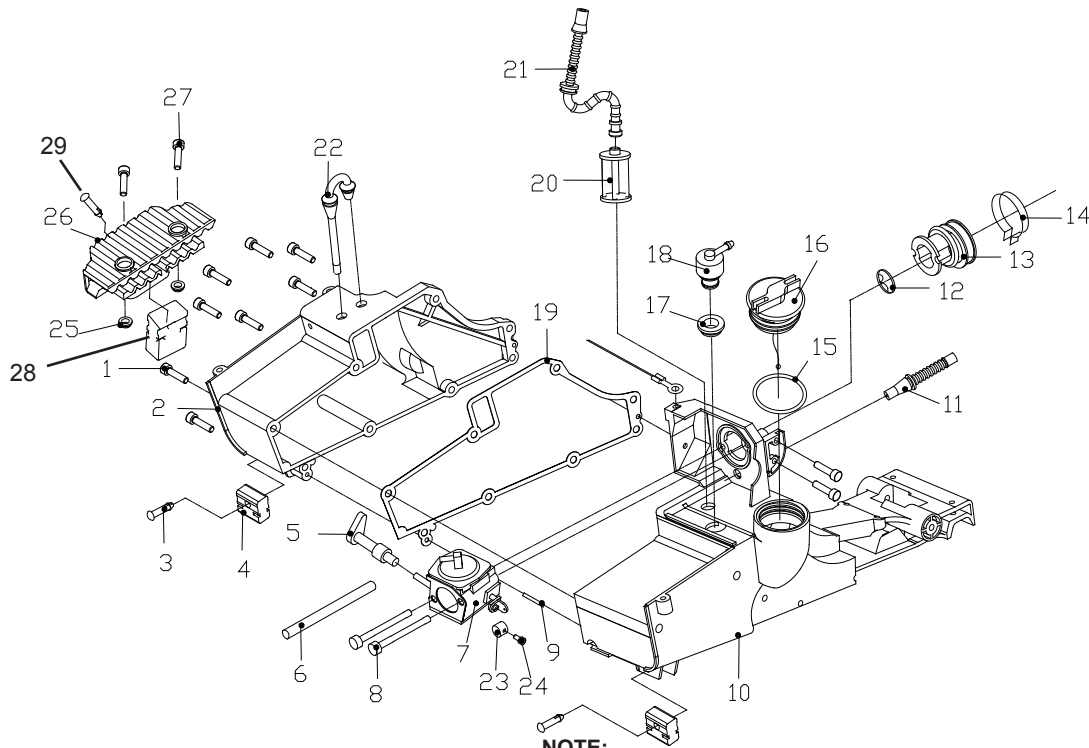


**NOTE:**

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## PARTS LIST/ASSEMBLY DIAGRAM FUEL TANK & CARBURETOR

Part	Description	Qty.	Part	Description	Qty.
1C	Screw (M5 x 20)	8	16C	Fuel Tank Cap	1
2C	Fuel Tank (Left)	1	17C	Washer	1
3C	Pin	2	18C	Tank Vent	1
4C	Rubber Mount	2	19C	Gasket	1
5C	Choke Lever	1	20C	Fuel Pick-Up Filter	1
6C	Air Hose	1	21C	Hose	1
7C	Carburetor	1	22C	"U" Rubber Tube	1
8C	Screw (M5 x 55)	2	23C	Screw Bracket	1
9C	Split Pin	2	24C	Screw (M4x5)	1
10C	Fuel Tank (Right)	1	25C	Lock Nut (M5)	2
11C	Connecting Hose	1	26C	Foot Pad	1
12C	Sleeve	1	27C	Screw M5X20	2
13C	Manifold	1	28C	Foot Pad Support	1
14C	Hose Clip	1	29C	Pin	1
15C	O-Ring	1			



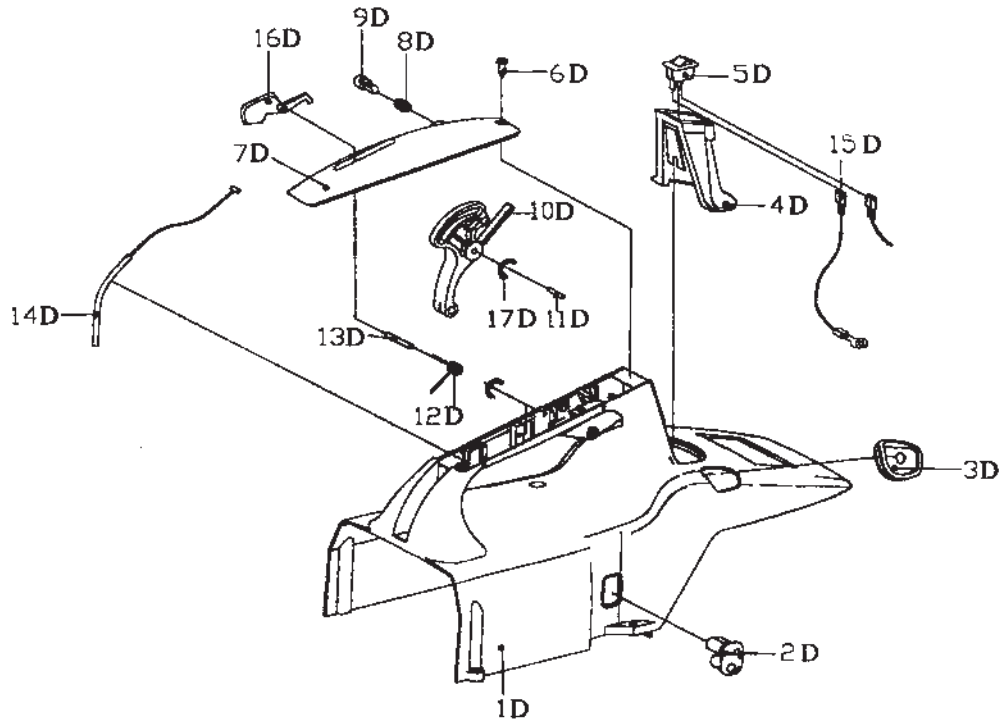
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## PARTS LIST/ASSEMBLY DIAGRAM HANDLE & MAIN COVER ASSEMBLY

Part	Description	Qty.
1D	Main Cover	1
2D	Side Sealing Cover	1
3D	Front Sealing Cover	1
4D	Spark Plug Cover	1
5D	Kill Switch	1
6D	Screw (ST2.9 x 13)	2
7D	Rear Handle	1
8D	Torsion Spring	1
9D	Throttle Lock	1

Part	Description	Qty.
10D	Throttle Trigger	1
11D	Trigger Pin	1
12D	Torsion Spring	1
13D	Shaft	1
14D	Throttle Triggering Wire	1
15D	Flameout Wire	1
16D	Trigger Safety Lever	1
17D	Retainer Ring 4	1



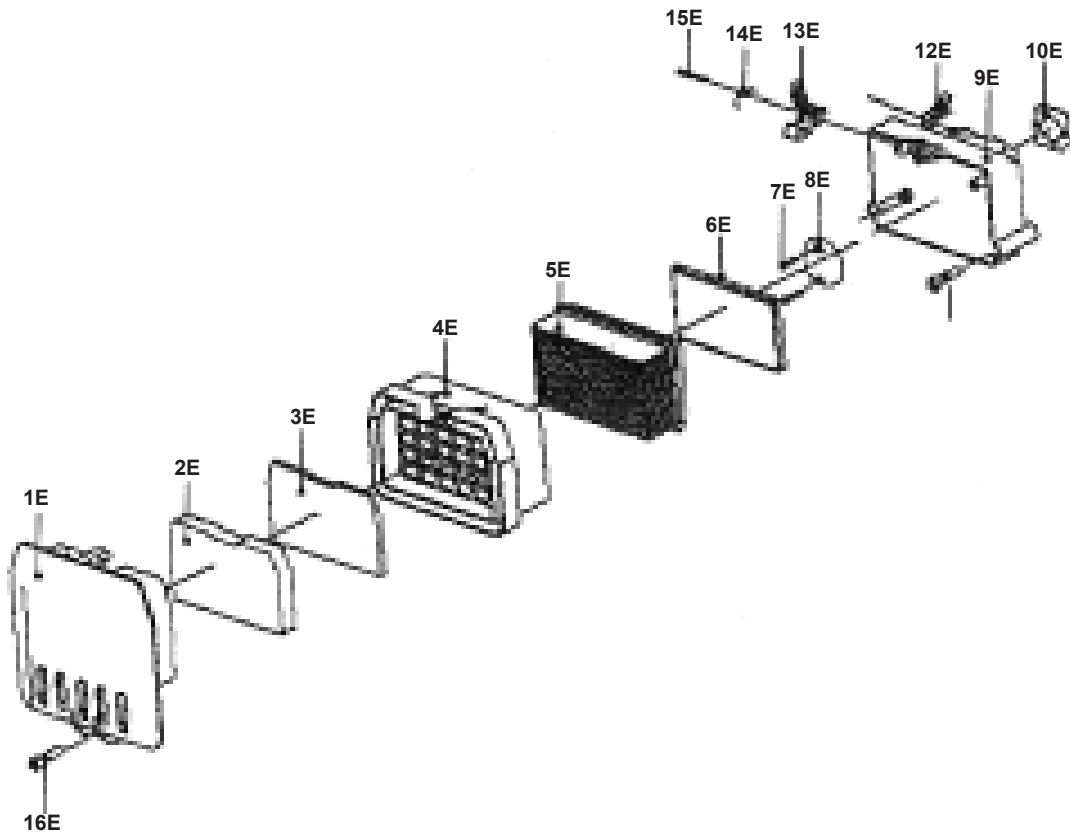
**NOTE:**

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**PARTS LIST/ASSEMBLY DIAGRAM  
AIR FILTER ASSEMBLY**

Part	Description	Qty.
1E	Filter Cover	1
2E	Pre-Filter I	1
3E	Pre-Filter 2	1
4E	Filter Housing	1
5E	Paper Air Filter	1
6E	Secondary Filter	1
7E	Screw (ST2.9 x 19)	2
8E	Half Round	1

Part	Description	Qty.
9E	Filter Base	1
10E	Gasket	1
11E	Screw (M5 x 16)	2
12E	Flat Spring	1
13E	Filter Cover Lock Lever	1
14E	Torsion Spring	1
15E	Pin (B3 x 32)	1
16E	Screw (M5 x 12)	1



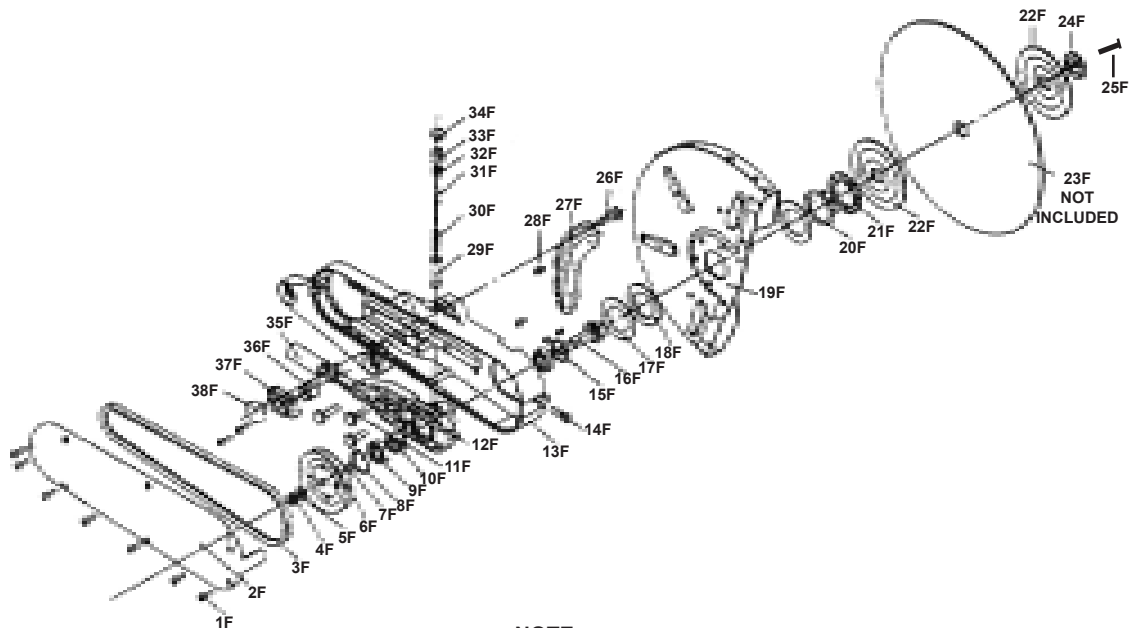
**NOTE:**

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## PARTS LIST/ASSEMBLY DIAGRAM TRANSMISSION BOX & CUTTER ASSEMBLY

Part	Description	Qty.	Part	Description	Qty.
1F	Screw (M5 x 20)	9	20F	Lock Washer	2
2F	Transmission Box Cover	1	21F	Round Lock Nut	1
3F	V-Belt (10X855 Li)	1	22F	Flange	2
4F	Nut (M10 – Left)	1	23F	Saw Blade (14" Diameter – Not Included)	0
5F	Washer (10)	1	24F	Washer	1
6F	Belt Pulley Assy.	1	25F	Hex Bolt	1
7F	Washer (12)	1	26F	Flat Bolt (M8 x 35)	1
8F	Clip (35)	2	27F	Anchor Plate	1
9F	Ball Bearing (6202)	2	28F	Screw (M6 x 12.5)	2
10F	Ring	1	29F	Rod Sleeve	1
11F	Bolt (M8 x 30)	2	30F	Spring	1
12F	Bearing Plate	1	31F	Rod	1
13F	Transmission Box	1	32F	End Cap	1
14F	Bolt (M8 x 35)	1	33F	Dust Shield	1
15F	Woodruff Key (4 x 13)	2	34F	Shaft Lock	1
16F	Blade Shaft	1	35F	Belt Tensioner w/Tensioning Nut	1
17F	Washer	2	36F	Clamping Lever	1
18F	Rubber Ring	1	37F	Cover	1
19F	Blade Guard Assy.	1	38F	Blade Guard Positioning Knob	1

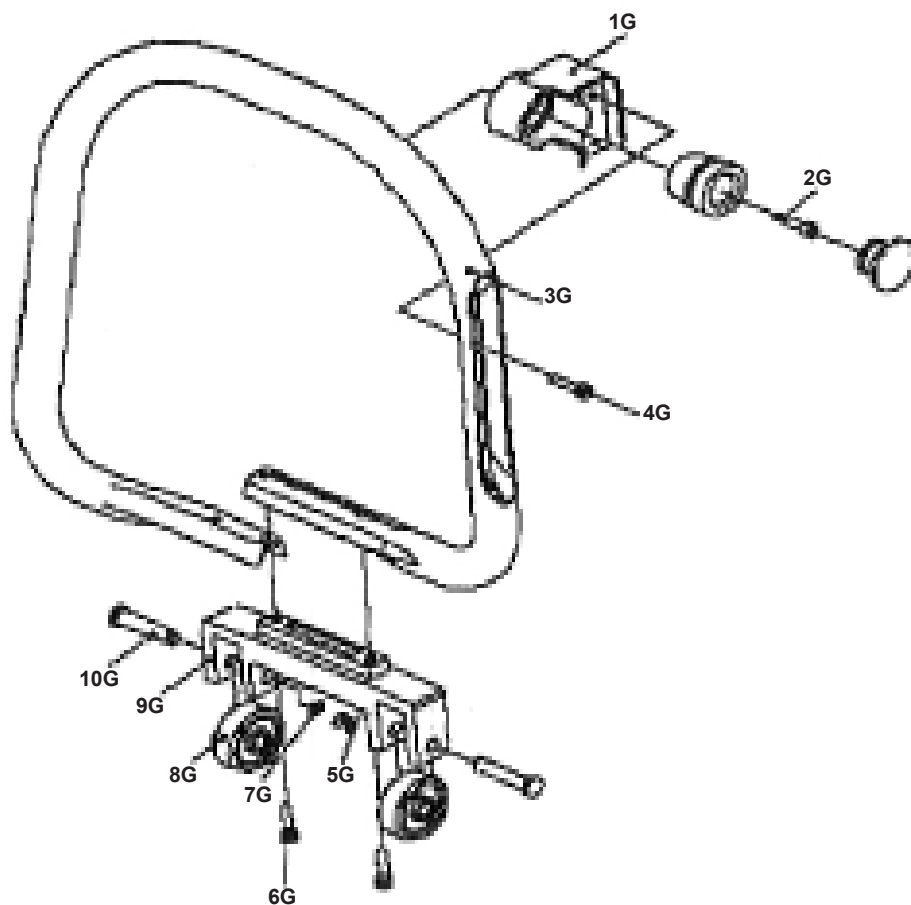


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**PARTS LIST/ASSEMBLY DIAGRAM  
FRONT HANDLE & SUPPORT ASSEMBLY**

Part	Description	Qty.	Part	Description	Qty.
1G	Handle Bracket	1	6G	Screw (M5 x 25)	2
2G	Screw (M5 x 12)	2	7G	Washer (8)	2
3G	Front Handle	1	8G	Wheel	2
4G	Screw (M5 x 24)	2	9G	Support	1
5G	Spring Lock (8)	2	10G	Wheel Shaft	2



**NOTE:**

Some parts are listed and shown for illustration purposes only, and are not available individually as replacement parts.

## **LIMITED 90 DAY WARRANTY**

Harbor Freight Tools Co. makes every effort to assure that its products meet high quality and durability standards, and warrants to the original purchaser that this product is free from defects in materials and workmanship for the period of 90 days from the date of purchase. This warranty does not apply to damage due directly or indirectly, to misuse, abuse, negligence or accidents, repairs or alterations outside our facilities, criminal activity, improper installation, normal wear and tear, or to lack of maintenance. We shall in no event be liable for death, injuries to persons or property, or for incidental, contingent, special or consequential damages arising from the use of our product. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation of exclusion may not apply to you. THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS.

To take advantage of this warranty, the product or part must be returned to us with transportation charges prepaid. Proof of purchase date and an explanation of the complaint must accompany the merchandise. If our inspection verifies the defect, we will either repair or replace the product at our election or we may elect to refund the purchase price if we cannot readily and quickly provide you with a replacement. We will return repaired products at our expense, but if we determine there is no defect, or that the defect resulted from causes not within the scope of our warranty, then you must bear the cost of returning the product.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

**3491 Mission Oaks Blvd. •  
PO Box 6009 • Camarillo, CA 93011 • (800)  
444-3353**

## **Emission Control System Warranty**

### **United States Emission Control Defects Warranty Statement**

The the United States Environmental Protection Agency (herein EPA) and Harbor Freight Tools® (herein HFT) are pleased to explain the emission control system warranty on your 1995 and later Small Off-Road Engine (herein engine). The engine must be designed, built and equipped to meet stringent anti-smog standards. New off-road, spark-ignition engines certified for model year 1997 and

later, must meet such standards set forth by the EPA. HFT must warrant the emission control system on your engine for the periods of time described below, provided there has been no abuse, neglect or improper maintenance of your engine.

Your emission control system may include parts such as the carburetor or fuel-injection system, and the ignition system. Also included may be hoses, belts, connectors and other emission-related assemblies.

Where a warrantable condition exists, HFT will repair your engine at no cost to you including diagnosis, parts and labor.

### **Manufacturer's Warranty Coverage**

The 1995 and later engines are warranted for two (2) years. If any emission-related part on your engine is defective, the part will be repaired or replaced by HFT.

### **Harbor Freight Tools Emission Control Defects Warranty Coverage**

Engines are warranted for a period of two (2) years relative to emission control parts defects, subject to the provisions set forth below. If any emission related part on your engine is defective, the part will be repaired or replaced by HFT.

### **Owner's Warranty Responsibilities**

- As the engine owner, you are responsible for the performance of the required maintenance listed in your Owner's Manual. HFT recommends that you retain all receipts covering maintenance on your engine, but HFT cannot deny warranty solely for the lack of receipts or for your failure to ensure the performance of all scheduled maintenance.
- As the engine owner, you should, however, be aware that HFT may deny you warranty coverage if your engine or a part has failed due to abuse, neglect, improper maintenance, or unapproved modifications.
- You are responsible for shipping your engine to a HFT warranty station as soon as a problem exists. Contact the HFT Customer Service department at the number below to make shipping arrangements. The warranty repairs should be completed in a reasonable amount of time, not to exceed 30 days.

If you have any questions regarding your warranty rights and responsibilities, you should contact the Harbor Freight Tools Customer Service Department at 1-800-444-3353.

### **Harbor Freight Tools Emission Control Defects Warranty Provisions**

#### **1. Length of Coverage**

HFT warrants to a first retail purchaser and each subsequent purchaser that the engine is free from defects in materials and workmanship that cause the failure of warranted parts for a period of two (2) years after the date of delivery to the first retail purchaser.

#### **2. No Charge Repair or Replacement**

Repair or replacement of any warranted part will be performed at no charge to the owner if the work is performed through a warranty station authorized by HFT. For emissions warranty service, contact the HFT Customer Service Department at 1-800-444-3353.

#### **3. Consequential Damages Coverage**

Coverage under this warranty shall also extend to the failure of any engine components caused by the failure of any warranted part while it is still covered under this warranty.

#### 4. Coverage Exclusions

Warranty claims shall be filed in accordance with the provisions of the HFT warranty policy explained in the box at the top of the previous page. HFT shall not be liable for any loss of use of the engine, for any alternative usage, for any damage to goods, loss of time, or inconvenience. Warranty coverage shall also be excluded for any part which fails, malfunctions, or is damaged due to failure to follow the maintenance and operating instructions set forth in the Owner's Manual including, but not limited to:

- (a) use of parts which are not authorized by HFT
- (b) improper installation, adjustment or repair of the engine or of any warranted part unless performed by an authorized warranty center
- (c) failure to follow recommendations on fuel use contained in the Owner's Manual
- (d) improper or inadequate maintenance of any warranted parts
- (e) repairs performed outside of the authorized warranty service dealers
- (f) alterations by changing, adding to or removing parts from the engine.

#### 5. Service and Maintenance

Component parts which are not scheduled for replacement as required maintenance or are scheduled only for regular inspection to the effect of "repair or replace as necessary" are warranted for the warranty period. Any warranted part which is scheduled for replacement as required maintenance is warranted for the period of time up to the first scheduled replacement point for that part. Any replacement part, provided it is equivalent in durability and performance, may be used in performance of maintenance or repairs. The owner is responsible for commissioning a qualified technician/mechanic to perform all required maintenance, as outlined in the **Inspection, Cleaning, and Maintenance** section on page 14 of this manual.

#### 6. Warranted Parts

##### 1) Fuel Metering System

- i) Carburetor and its internal parts.
- ii) Fuel pump (if so equipped).
- iii) Cold start enrichment system.

##### 2) Air Induction System

- i) Intake pipe/manifold.
- ii) Air cleaner.

##### 3) Ignition System

- i) Spark plug.
- ii) Magneto ignition system.

##### 4) Catalyst System (if so equipped)

- i) Exhaust pipe stud.
- ii) Muffler.
- iii) Catalytic converter (if so equipped).

##### 5) Miscellaneous items Used in Above Systems

- i) Vacuum, temperature and time sensitive valves and switches.
- ii) Hoses, belts, connectors, and assemblies.